

18 October 1966

MEMORANDUM FOR THE RECORD

SUBJECT: Systems Science and Cybernetics Conference

1. I attended selected sections of the 1966 Systems Science and Cybernetics Conference held at the International Inn, Washington, D. C., on 17 and 18 October and obtained a copy of the Record of the symposium which included copies of the papers which were given.

2. I registered for the conference and attended two presentations of the "Military and Space Systems Engineering" section 17 October. The presentations urged a commonsense application of AFSCM 375-5. AFSCM 375-5 is the Air Force prescription for documentation of trade-offs, systems analyses, etc., and can be extremely cumbersome. Nevertheless, some of the techniques, methodology, etc., may be useful to the DD/S&T/SAS.

3. I was particularly interested in the session "Logic of Decision". This turned out to be, in part, a family affair chaired by a Stanford University professor and featuring four papers given by Stanford University personnel, and one paper by GE (the Chairman, Dr. Howard of Stanford is a consultant to GE). The initial paper "Introduction to Decision Theory" was tutorial in nature and was reasonably well presented by a graduate student, Warner North. It was easily the best paper presented in the session. The succeeding papers "Modeling and the Encoding of Knowledge", "Decision-Making in Model Selection", and "A Computational Structure for Decision Analysis" were increasingly theoretical and abstract, and tended to digress to making decisions about decisions made about decisions - ad infinitum. Particular attention was given to the economic value of additional information which might affect the decision process.

25X1A [ ] is dealing with this in a very practical way in some of his work, but I found little in the papers which could contribute to the work being done in this area by him. It was not clear from the Stanford representatives that any reduction to practice had been

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-2-

accomplished in other than relatively trivial cases.

4. The logic or decision processes, whether applied to systems analysis or any other areas, are well defined and provide a valuable discipline in evaluating alternatives, etc. Existing methodology appears to be adequate for any reasonable problem, but for complex systems substantial effort and hard work are required to produce really meaningful results.

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**1966 SYSTEMS SCIENCE AND  
CYBERNETICS CONFERENCE**

**International Inn**

Washington, D.C.

October 17-18, 1966

**SUNDAY—OCTOBER 16, 1966**

8:00 p.m. - 11:00 p.m. *Registration and Mixer*

**MONDAY—OCTOBER 17, 1966**

8:00 a.m. - 9:00 a.m. *Registration*

9:00 a.m. - 12:00 noon *Military and Space Systems  
Engineering*

**Parallel Sessions**

2:00 p.m. - 5:00 p.m. *A. Civil Systems Engineering  
B. Cybernetics*

**TUESDAY—OCTOBER 18, 1966**

**Parallel Sessions**

9:00 a.m. - 12:00 noon *A. Industrial Systems Engineering  
B. Logic of Decision*

2:00 p.m. - 5:00 p.m. *A. Large Scale Systems  
B. New Technologies in Educational  
Systems*

**WEDNESDAY—OCTOBER 19, 1966**

Working Sessions of Technical Committees of G-SSC. All attendees invited to attend.

**PURPOSE**

To study the techniques and philosophies of systems science and cybernetics, and to provide an opportunity for those active in the field in industry, government, and the universities to exchange views and participate in charting the future course of effort in this area of growing importance and significance.

1966 STEMS SCIENCE AND CYBERNETICS CONFERENCE  
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INTERNATIONAL INN  
WASHINGTON, D.C.  
OCTOBER 17-18, 1966

MONDAY—OCTOBER 17, 1966

9:00 a.m. - 12:00 noon

MILITARY AND SPACE SYSTEMS ENGINEERING

CHAIRMAN: John F. Jacobs  
The MITRE Corporation

1. *Minuteman System Engineering: A Case Study*  
Joseph Dresner, TRW Systems
2. *Development Control Through Systems Effectiveness Trade-Offs*  
George Luchak, Radio Corporation of America
3. *A Methodology for System Engineering: AFSCM 375-5*  
Norman L. Gelbwaks, Aerospace Corporation
4. *Effectiveness Analysis of Airborne Navigation and Weapon Delivery Systems*  
Igor Bazovsky, Litton Industries

12:15 - 1:45

Luncheon

SPEAKER: Mr. J. Herbert Hollomon, Assistant Secretary of Commerce for Science & Technology

2:00 p.m. - 5:00 p.m.

A. CIVIL SYSTEMS ENGINEERING—CRITICAL ISSUES AND CURRENT DEVELOPMENTS

CHAIRMAN: Carl F. Stover  
National Institute of Public Affairs

DISCUSSION:  
John P. Nash, Lockheed Missiles and Space Company  
William L. Rogers, Von Karman Center, Aerojet-General Corporation  
Jack J. Jones, Transportation, North American Aviation  
Thomas C. Rowan, System Development Corporation

2:00 p.m. - 5:00 p.m.

B. CYBERNETICS

CHAIRMAN: Murray L. Babcock,  
University of Illinois  
ASSISTED BY: J. C. Kotelly,  
NASA Electronics Research Center

1. *Unlearning the Obsolescent*  
Warren M. Brody, M.D., NASA Electronics Research Center
2. *A Stochastic Model for Real and Simulated Neurophysiological Behavior*  
Will Gersch, Center of Applied Stochastics, Purdue University
3. *Applications of Evolutionary Programming*  
Lawrence J. Fogel, Decision Sciences, Inc.  
A. J. Owens, Decision Sciences, Inc.  
M. J. Walsh, Decision Sciences, Inc.

TUESDAY—OCTOBER 18, 1966

9:00 a.m. - 12:00 noon

A. INDUSTRIAL SYSTEMS ENGINEERING

CHAIRMAN: L. F. Lewis,  
General Electric Company

1. *Project Sketchpad: Man-Machine Display Control Relationships*  
John E. Ward, Massachusetts Institute of Technology

2. *Evolution of an Industrial System—A Rolling Mill Computer Application*

G. E. Terwilliger, General Electric Company  
D. J. Fapiano, General Electric Company

3. *Objective Setting in a Large Industrial Firm—Case Study in Steel*

K. Chen, Stanford Research Institute  
T. E. Daney, Jones & Laughlin Steel Corp.  
O. C. Gochenour, Jones & Laughlin Steel Corp.  
E. Y. Kung, Jones & Laughlin Steel Corp.

4. *Bay Area Rapid Transit Project*

Dean Aboudara, San Francisco Bay Area Rapid Transit District

9:00 a.m. - 12:00 noon

B. LOGIC OF DECISION

CHAIRMAN: Ronald A. Howard, Institute in Engineering-Economic Systems, Stanford University

1. *Introduction to Decision Theory*  
D. Warner North, Stanford University
2. *Modeling and the Encoding of Knowledge*  
George E. Murray, Jr., Institute in Engineering-Economic Systems, Stanford University
3. *Decision-Making in Model Selection*  
Richard D. Smallwood, Institute in Engineering-Economic Systems, Stanford University
4. *A Computational Structure for Decision Analysis*  
James E. Matheson, Stanford Research Institute
5. *Decision Analysis for Product Development*  
W. Howard Cook, Atomic Products Div., General Electric Company

12:15 - 1:45

LUNCHEON

2:00 p.m. - 5:00 p.m.

A. LARGE SCALE SYSTEMS: CONCEPTUAL FRAMEWORK FOR THEIR STUDY AND DESIGN

CHAIRMAN: Mihajlo D. Mesarovic  
Systems Research Center  
Case Institute of Technology

DISCUSSION:

George Dantzig, University of California  
Otto Klima, General Electric Company  
L. S. Slaughter, Union Carbide  
T. G. Windeknecht, Case Institute of Technology

2:00 p.m. - 5:00 p.m.

B. NEW TECHNOLOGIES IN EDUCATIONAL SYSTEMS

CHAIRMAN: Richard D. Smallwood  
Institute in Engineering-Economic Systems  
Stanford University

1. *Research and Development of Educational Systems*  
Louis Bright, U. S. Office of Education
2. *Computer-based Instruction in Initial Reading: The Stanford Project*  
Richard C. Atkinson, Stanford University
3. *Computer-based Educational Systems*  
Wallace Feurzeig, Bolt Beranek and Newman, Inc.
4. *The Single Concept Film in College Instruction*  
Arthur Bryson, Harvard University

Attendees may register in advance of the Conference using the attached form. Conference registration will be held in the main lobby of the International Inn at the following times:

Sunday, October 16 from 8:00 p.m. to 11:00 p.m.

Monday, October 17 from 8:00 a.m. to 9:00 a.m.

Those who have preregistered will be able to pick up their badge and Conference Record at the Registration Desk. Registration fees (which include one copy of the Conference Record) are as follows:

Before September 25, 1966 — \$12.50

After September 25, 1966 — \$15.00

*A mixer will be held for early arrivals in conjunction with registration on Sunday evening.*

#### HOUSING

All activities in connection with the Conference and Working Group meetings are being held at the International Inn. A block of accommodations is being held for the convenience of the attendees; if you wish to stay at the Inn during the Conference, it is necessary to make reservations by September 25.

The Inn is conveniently located in the heart of the Capital and free parking is available. If you wish to relax by the indoor pool, bring a bathing suit.

For reservations write:

International Inn  
Thomas Circle/14th and M Streets, N.W.  
Washington, D.C. 20005  
Telephone: Area Code 202—783-4600  
Rates: \$16.00 per night, single  
\$20.00 per night, twin

*Note: Should you desire to bring your family to Washington prior to the Conference, the Inn will provide special weekend accommodations at the single room rate. (Friday night through Sunday) Write or call the Inn for further information.*

#### CONFERENCE COMMITTEE

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James E. Matheson, *Stanford Research Institute*  
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Edward J. Parker, *University of Pennsylvania*  
LOCAL ARRANGEMENTS CHAIRMAN:  
William H. von Alven, *ARINC Research Corporation*

#### IEEE SYSTEMS SCIENCE AND CYBERNETICS GROUP ADMINISTRATIVE COMMITTEE OFFICERS

CHAIRMAN:  
Harold Chestnut, *General Electric Company*  
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